

Item No. 11

Joint Outfall System –  
Joint Water Pollution Control Plant  
(CA0053813)

**TENTATIVE RESOLUTION**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION**

320 West 4<sup>th</sup> Street, Suite 200, Los Angeles, California 90013  
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**RESOLUTION NO. R21-XXX**

**JOINT OUTFALL SYSTEM  
APPROVAL OF PROPOSED SPECIAL STUDIES FOR THE  
JOINT WATER POLLUTION CONTROL PLANT, ORDER R4-2017-0180  
NPDES PERMIT NO. CA 0053813**

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Los Angeles Water Board), finds:

1. The Los Angeles Water Board adopted the National Pollutant Discharge Elimination System (NPDES) permit Order No. R4-2017-0180 for the Joint Outfall System's<sup>1</sup> (Sanitation Districts) Joint Water Pollution Control Plant (JWPCP) on September 7, 2017.
2. The NPDES permit contains a requirement for the Sanitation Districts to consult annually with the Los Angeles Water Board to determine the need for special studies. Detailed scopes of work for proposals must be presented to obtain the Los Angeles Water Board approval and to inform the public. Special studies are intended to focus on refined questions regarding specific effects or development of monitoring techniques. Questions regarding effluent or receiving water quality, discharge impacts, ocean processes in the area of the discharge, or development of techniques for monitoring, arising out of the results of core or regional monitoring, may be pursued through these special studies.
3. On December 20, 2020, representatives from the Sanitation Districts met with Los Angeles Water Board staff to discuss two proposed special studies for 2021: 1) *Palos Verdes Shelf Superfund Site Remediation: Second Monitored Natural Recovery (MNR) Sediment Core Sampling and Chemical Contamination Characterization*, and 2) *The Use of Chemical Scans to Characterize Toxic Effluent Samples*.
4. The first proposed special study, *Palos Verdes Shelf Superfund Site Remediation: Second MNR Sediment Core Sampling and Chemical Contamination characterization*, will assist USEPA's efforts to remediate the Palos Verdes Shelf Superfund Site.

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<sup>1</sup> Ownership and operation of the Joint Outfall System is proportionally shared among the signatory parties to the amended Joint Outfall Agreement effective July 1, 1995. These parties include County Sanitation Districts of Los Angeles County Nos. 1, 2, 3, 5, 8, 15, 16, 17, 18, 19, 21, 22, 23, 28, 29, and 34, and South Bay Cities Sanitation District of Los Angeles County.

USEPA has been implementing remedial actions since the early 2000s, including implementing a pilot cap in 2000, conducting public education and outreach in partnership with community-based organizations to address risks posed by DDT contamination in seafood, and performing surveys in 2009 and 2013 to measure DDT and PCB concentrations in sediment cores, fish tissue, and the water column. USEPA is currently in the final stages of awarding a contract to update the human health and ecological risk assessments for the Palos Verdes Shelf. These risk assessments along with a Feasibility Study of cleanup alternatives will support the selection of a final remedy for the Palos Verdes Shelf. The Sanitation Districts have collaborated with USEPA on their efforts over the past decade, and in the process have completed five Special Studies. This latest proposed special study focuses on status and trends of DDT and PCB concentrations in the sediment, water column, and fish tissue and will support the upcoming risk assessments and the Feasibility Study.

5. The second proposed study, *The Use of Chemical Scans to Characterize Toxic Effluent Samples*, is designed to evaluate whether the chemical fingerprints of non-toxic effluent samples can be used to help identify toxicants in toxic effluent samples using non-targeted analysis (NTA). This proposed study will enhance the Sanitation Districts' ability to identify the specific parameters driving the difference between toxic and non-toxic samples and assist in the Sanitation Districts' toxicity investigations.
6. Los Angeles Water Board finds that these proposed special studies fulfill the requirements of the NPDES permit Monitoring and Reporting Requirements at section I.Q.3., and will further expand the Los Angeles Water Board's knowledge of the status and trends of chemical concentrations at the Palos Verdes Shelf Superfund Site and of tools to identify potential toxicants in the discharge from the JWPCP.

THEREFORE, BE IT RESOLVED THAT:

1. The Los Angeles Water Board has determined that the two Special Studies proposed for 2021, 1) *Palos Verdes Shelf Superfund Site Remediation: Second Monitored Natural Recovery (MNR) Sediment Core Sampling and Chemical Contamination Characterization*, and 2) *The Use of Chemical Scans to Characterize Toxic Effluent Samples*, merit approval.
2. The Los Angeles Water Board hereby approves the Sanitation Districts' proposals for these special studies.

I, Renee Purdy, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of the Resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region, on May 13, 2021.

Renee Purdy  
Executive Officer

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## **SPECIAL STUDY PROPOSALS**

**Los Angeles County Sanitation Districts  
Joint Water Pollution Control Plant**

**Proposed Special Study 2021  
Palos Verdes Shelf Superfund Site Remediation:  
Second Monitored Natural Recovery (MNR) Sampling**

**1. BACKGROUND**

From 1953 until 1971, Montrose Chemical (Montrose) discharged wastes containing DDT from its manufacturing operations to the sanitary sewer collection system operated by the Los Angeles County Sanitation Districts (Sanitation Districts). Other industries also sent wastes containing PCBs and metals to the sanitary sewer. The Sanitation Districts' sewer system carried wastes to the Joint Water Pollution Control Plant (JWPCP) at Carson, and treated wastewater containing contaminants including DDT, PCBs, and metals reached the Pacific Ocean via the Sanitation Districts' White Point outfall system. The wastes were released through the diffuser portions of the outfall pipes situated on the seafloor. The estimated mass of DDTs discharged from the White Point outfalls from the 1950s through 1971 was 1,000 metric tons.

In 1994, the U.S. Geological Survey (USGS) characterized an area of 44 km<sup>2</sup> (17 sq. miles) on the Palos Verdes Shelf (PVS) with elevated levels of DDT and PCBs in surface sediments. Subsequent data showed that DDT- and PCB- contaminated sediments covered a larger area, and the U.S. Environmental Protection Agency (EPA) expanded the PVS study to include the area from Point Fermin in the southeast to the southern edge of the Redondo canyon, northwest of the Palos Verdes peninsula, to a depth of 200 meters down the PVS slope.

Since 1985, fish consumption advisories and health warnings have been posted in southern California because of elevated DDT and PCB levels. Bottom-feeding fish are particularly at risk for high contamination levels. In June 2009, the state Office of Environmental Health Hazard Assessment (OEHHA), issued a new health advisory and safe eating guidelines for fish from coastal areas of Southern California, including the PVS. The advisory warns anglers against eating certain species of fish from specific locations between Ventura Harbor and San Mateo Point. In the PVS area, the guidance advises against consumption of white croaker, barred sand bass, and topsmelt caught from the coastal area between Santa Monica Pier and Seal Beach Pier. Consumption of other fish from this area, including kelp bass, sardines and sculpin, should be limited.

In September of 2009, the EPA issued an Interim Record of Decision (IROD) for the Palos Verdes Shelf (PVS) Superfund site remediation. The selected remedy was an interim action that follows an iterative approach to remediation. This remedy specifically included: (1) placement of an *in-situ* isolation cap over the erosive edge of the deposit that also contains

the most highly contaminated sediment, (2) continuation of an Institutional Controls program to educate anglers about the risks of local fish, and (3) monitoring natural recovery to determine when sediment, water, and fish reach target levels. After assessing the feasibility and effectiveness of the interim remedy, EPA will decide whether additional actions are warranted and include those in a final Record of Decision.

The EPA has been implementing the interim actions since 2009, including implementing a test cap and conducting surveys in 2009 and 2013 to measure DDT and PCB concentrations in sediment cores, fish tissue, and the water column. The Sanitation Districts have collaborated with EPA on their efforts over the past decade, and in the process have completed five Special Studies:

- i. Palos Verdes Shelf Baseline Sediment Coring and Chemical Contamination Characterization (R9-008, JWSS-09-001);
- ii. Measuring the Flux of Persistent Organic Pollutants (POPs) Across the Sediment-Water Interface on the Palos Verdes Shelf Using Passing Samplers (R11-005, JWSS-11-001);
- iii. Palos Verdes Shelf Baseline Sediment Coring and Chemical Contamination Characterization (R14-002, JWSS-14-001);
- iv. Passive Sampling to Characterize Dissolved Persistent Organic Pollutant Concentrations in the Water Column of the Palos Verdes Shelf Superfund Site (R14-002, JWSS-14-002);
- v. Palos Verdes Shelf Superfund Site White Croaker and Barred Sand Bass Tissue Contamination Characterization (R14-002, JWSS-14-003).

## **2. PROPOSED SPECIAL STUDIES RELATED TO EPA PALOS VERDES SHELF SUPERFUND REMEDIATION**

The goal of the proposed Special Study is to assist EPA in their efforts to remediate the PVS Superfund site and meet their requirement to conduct the second five-year review following the 2009 IROD. More specifically, the study aims to provide information on status and trends of DDT and PCB concentrations in the sediment, water column, and fish tissue. Each of these components is detailed in the following sections.<sup>1</sup>

### **2.1 PALOS VERDES SHELF SUPERFUND SITE SEDIMENT CORE SAMPLING AND CHEMICAL CONTAMINATION CHARACTERIZATION**

#### **Objectives:**

The objectives for this component of the special study are as follows:

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<sup>1</sup> The details provided herein are based on the EPA's current plans and may be adjusted as the plans are further developed.

- Determine status and trends in DDT and PCB contamination levels on the PVS. Collected data will be used to analyze the rate of change in contaminant concentrations and provide the basis for evaluating the effectiveness of any future remediation actions.
- Conduct intense sampling in the vicinity of the outfall area to inform the design of the proposed sediment cap over the most contaminated sediments near the Sanitation Districts' outfall. If necessary, these data will be used to determine the size and shape of a sediment cap that will maximize the isolation of the most contaminated sediments while minimize the risk of damaging or diminishing operational effectiveness of the Sanitation Districts' outfalls.

#### **Benefits:**

The data from this study will add to the historical record of data obtained from the Baseline and Outfall Area surveys in 2009 and 2013. These data will support the enhanced Monitored Natural Recovery (MNR) component of the IROD and will allow EPA to forecast natural recovery, model sediment transport, and track the effectiveness of possible future remediation actions. This information will also be vital for defining the size and shape of the final cap, if needed. The benefits to the Sanitation Districts include training/maintenance of skills in sediment core sampling and slicing as well as updating the Sanitation Districts long-term sediment core monitoring data record.

#### **Approach:**

Sanitation Districts' staff and boat crew expect to spend approximately ten days at sea collecting up to 80 sediment cores from the PVS between 40 and 150 m water depth. Sampling locations occupied in the 2013 survey will be revisited for trends analysis and confirmation of results obtained in 2013. An inclinometer (tilt sensor) will be loaded on top of the gravity corer to ensure that vertical sediment cores are collected.

The gravity core sampler originally developed by the Southern California Coastal Water Research Project (SCCWRP) will be used for the survey. Once the cores are collected, they are quickly frozen onboard as intact cores using liquid nitrogen and dry ice. Following operations each day, the frozen cores will be offloaded and transported to freezers at the Sanitation Districts' JWPCP Water Quality Laboratory until processed for physical and chemical analyses.

JWPCPWQL staff will slice the cores and prepare samples for shipping to the analytical laboratories. Specifically, frozen cores will be sliced at 2-cm intervals and approximately equal amounts of sediment subsampled and distributed to four sample jars. The samples will be analyzed for DDTs and PCB congeners. Additionally, total organic carbon, specific gravity, percent moisture and grain size will also be measured. In order to reduce analytical costs, EPA will analyze every 2-centimeter interval from top 8-centimeters (biologically active layer) and every 4-centimeter interval for the remainder of each core. The study is expected to generate up to 3,500 samples for chemical, physical and geotechnical analyses.

## **2.2 PASSIVE SAMPLING TO CHARACTERIZE DISSOLVED PERSISTENT ORGANIC POLLUTANT CONCENTRATIONS IN THE WATER COLUMN OF THE PALOS VERDES SHELF SUPERFUND SITE**

### **Additional Background:**

Monitoring of the persistent organic pollutant concentrations in the water column before, during, and after the capping is necessary to evaluate the effectiveness of the remediation as well as any adverse effects from sediment resuspension induced contaminant release. Measurement of the very low dissolved concentrations of persistent organic pollutants (POPs), including DDTs and PCBs, is technically challenging and time consuming using the traditional techniques. In recent years, *in-situ* passive sampling methods, including solid-phase Microextraction (SPME) and low-density polyethylene (PE) strips have reduced the labor involved in sampling and post-collection processing, while allowing for dissolved POPs measurement at very low concentrations. Furthermore, passive sampling avoids many of the artifacts associated with traditional methods that result in over- or under-estimating dissolved concentrations.

### **Objectives:**

The objectives of this component of the proposed Special Study are to use passive sampling devices to: 1) measure the dissolved concentrations of DDTs and PCBs in different horizons of the water column, both along a spatial gradient away from the highly contaminated zone and at stations up-current of the most highly contaminated sediments, and 2) compare dissolved DDT and PCB concentrations to those measured using the same methods in September 2013 and 2010.

### **Benefits:**

The proposed Special Study will provide status and trend information relative to the interim and final remediation goals for DDTs and PCBs within the water column. Further, these data will add significantly to our limited knowledge of the concentrations and movement of DDTs and PCBs in water column within PVS superfund site and as a source of these contaminants into Santa Monica Bay in support of the associated DDT/PCB TMDL. Sanitation Districts' field crew will also obtain valuable training in the rigging, deployment, and retrieval of passive sampling devices.

### **Approach:**

The Sanitation Districts will spend up to three days at sea to deploy passive sampling devices at approximately 15 stations targeting between 40- and 60-meters isobaths. One station at the south rim of San Pedro Shelf will serve as a reference site for the 60 meters isobath.

PE samplers will be mounted at three water depths: five meters below surface, mid-depth, and five meters from the bottom. SPME devices will be co-deployed at selected



locations. The passive samplers will be immersed in the water column for 30-day in order to equilibrate with contaminant concentrations in the surrounding seawater. The Sanitation Districts' field crew expects retrieval of the passive sampling devices to take three days with assistance of scientists from SCCWRP and EPA's Office of Research and Development (ORD) in Narragansett, Rhode Island.

Retrieved passive samples will be analyzed for DDTs and breakdown products and PCB congeners using gas chromatography/mass selective detection (GC/MSD) in the selected-ion monitoring (SIM) mode. PE sample data will be quantified by EPA scientists while SPME sample data will be quantified by chemists at the SCCWRP.

## **2.3 PALOS VERDES SHELF SUPERFUND SITE FISH TISSUE SAMPLING AND CHEMICAL CONTAMINATION CHARACTERIZATION**

### **Objectives:**

The objective of this component of the proposed Special Study is to assess the status and trends of contamination in White Croaker caught on the PVS in relation to remediation goals for human and wildlife health protection. Results will also be used to assess correlations among contaminant concentrations in fish tissue, water column and sediment and potentially refine the models used to set the associated remediation targets for water and sediment.

### **Benefits:**

This component of the proposed Special Study will support the enhanced MNR program of the IROD by providing field support for fish and tissue types allowing EPA's resources to be focused on maximizing the number of individual fish being analyzed. This will allow for an understanding of the risk to wildlife that consume the entire fish and humans who typically consume skin off muscle fillets.

### **Approach:**

The Sanitation Districts' field crew will collect, by otter trawl, up to 30 adult white croakers (170 mm to 220 mm standard length) from established fishing Zones off PVS. These fish will be frozen onboard and transferred in a cooler on ice to freezers at the JWPCP after collection. These fish will be provided to EPA for individual analysis. EPA will analyze each fish for percent moisture, percent lipids, and DDTs and PCB congeners.

## **2.4 PROJECT SCHEDULE AND DELIVERABLES**

Field work is scheduled for late 2021, including sediment core sampling (winter), deployment and retrieval of passive sampling devices (winter), and night trawls for White Croaker (early November), with delivery of the fish to EPA before the end of 2021. Analytical results from the EPA contract laboratories are expected to be available in 2022.

The final technical report will be prepared and published by EPA and is expected to be released in the 2024. This report will signify the completion of this Special Study. Until release of EPA's final report, Sanitation Districts' staff will provide quarterly progress reports to the Los Angeles Regional Water Quality Control Board.

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**COMMENT LETTER RECEIVED**



April 9, 2021

Los Angeles Regional Water Quality Control Board Members  
320 West 4th Street, Suite 200  
Los Angeles, CA 90013

**SUBJECT: Support for Proposed Special Study for Palos Verdes Shelf Superfund Site Remediation**

Dear Chair Yee and Members of the Board:

The City of Rancho Palos Verdes supports the proposed special study for Palos Verdes Shelf Superfund Site Remediation: Second Monitored Natural Recovery (MNR) Sampling.

The City is concerned about the extent of environmental damage caused by offshore DDT dumping by the Montrose Chemical Corporation. This issue is of high importance to our community. A recent survey of Rancho Palos Verdes residents found that the impacts of chemical dumping in our coastal waters was the second most concerning local environmental issue among respondents, after ocean and beach pollution.

While the City is pleased that the proposed efforts will provide information on the status and trends of DDT and PCB contamination levels in the sediment, water column, and fish tissue, this is only the first step in addressing the untold harm done to our ecosystem by this long-hidden hazard.

Thank you for your continued efforts to study the effect of contaminants on the Palos Verdes Shelf. Engaging in the proposed special study will help guide interim, and ultimately final actions to mitigate the superfund site and ensure the Palos Verdes Shelf is safe for all. For these reasons, the City of Rancho Palos Verdes supports the Special Study for the Palos Verdes Shelf Superfund Site.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric D. Alegria".

**Eric Alegria**

Mayor, City of Rancho Palos Verdes

**Los Angeles Regional Water Quality Control Board Members**

**April 9, 2021**

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